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09/769,780	01/26/2001	Sid Chaudhuri	2000-0051	3990

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EXAMINER

FERRIS, DERRICK W

ART UNIT PAPER NUMBER

2663

DATE MAILED: 10/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/769,780

Applicant(s)

CHAUDHURI ET AL.

Examiner

Derrick W. Ferris

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 January 2001.  
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-66 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-12, 15-25, 27-43, 46-56 and 58-66 is/are rejected.  
7) ☒ Claim(s) 13, 14, 26, 44, 45 and 57 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 26 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Objections*

1. **Claims 33-57 and 59-61** are objected under 37 CFR 1.75 as being a substantial duplicate of respective claim 2-26 and 28-30. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight different in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP 706.03(k).

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. **Claims 3, 13, 14, 34, 44 and 45** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **Claim 3** lacks proper antecedent basis for “said uniquely assigned network address”. Please amend claim 3 to depend on claim 2. **Claim 13** lacks proper antecedent basis for “said probe message”. Please amend claim 13 to depend on claim 12. **Claim 14** lacks proper antecedent basis for “said wavelength availability vector”. Please amend claim 14 to depend on claim 13. **Claim 34** is rejected for the same reason as claim 3. **Claim 44** is rejected for the same reason as claim 13. **Claim 45** is rejected for the same reason as claim 14.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 31 and 62** are rejected under 35 U.S.C. 102(e) as being anticipated by U.S.

Patent No. 6,728,484 B1 to *Ghani et al.* ("*Ghani*").

As to **claim 31**, a step of naming is taught using the IP addresses, see e.g., column 15, lines 1-29; a step of determining the current topology and resources is taught as part of the Resource Updates, see e.g., column 11, lines 29-40 in reference to column 12; a step of requesting establishment is taught as a Channel Request Message, see e.g., column 10, line 65 – column 11, line 59; and allocating said lightpath is also taught as part of the Channel Request Message, see also column 9, lines 59-67.

As to **claim 62**, see similar rejection to claim 31.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-12, 15-25, 27-30, 32-43, 46-56, and 58-61** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,728,484 B1 to *Ghani et al.* ("*Ghani*") in view of "Networks Telecom Dictionary" to *Newton* and "A Framework for MPLS" to *Callon et al.* ("*Callon*").

In making a proper obviousness rejection under MPEP 706.02(j), the examiner will address the following four steps:

- a) the relevant teachings of the prior art relied upon, preferably with reference to the relevant column or page number(s) and line numbers where appropriate;*
- b) the difference of differences in the claim(s) over the applied cited references;*
- c) the proposed modification of the applied reference(s) necessary to arrive at the claimed subject matter; and*
- d) an explanation why one skilled in the art at the time of the invention was made would have been motivated to make the proposed modification.*

As such to **claim 1**, for step (a) *Ghani* discloses a provisioning system as shown in reference to figure 5. Also note column 7, lines 48-60 with respect to higher-layer protocols. In particular, IP addresses are assigned to the higher-layer networking clients 560, see e.g., column 9, lines 49-56 and column 14, line 65 – column 15, line 23. For the purpose of the rejection, the Examiner assumes a higher-layer is an IP router, see e.g., column 8, lines 31-41 and column 10, lines 41-49. The network topology is determined by link-state routing, see e.g., column 12, lines 7-15. As such, the link-state routing also takes into consideration current resources on the network. A request to setup a lightpath is shown as an incoming control message 554. A route is selected based on the current resources and the current topology using the link-state approach via Resource Updates, see e.g., column 11, lines 29-40. The channel request message is further forwarded to each network element along the route where an output channel is selected and reconfiguring of the OLXC takes place, see e.g., column 11, lines 40-60. A response message is also sent as part of channel request accept message, also see e.g., column 11, lines 40-60.

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For step (b) *Ghani* may be silent or deficient to the further limitation of using an API. In particular, *Ghani* discloses using commands sent from higher-layer clients 560 which in combination with channel provisioning form control settings, see e.g., figure 5. For step (b) *Ghani* may also be silent or deficient to the further limitation of maintaining state information. However, examiner would argue that some state information is maintained since a channel release message is used to tear-down a connection.

*Newton* teaches the further recited limitation above for API at e.g., the bottom of page 84. In particular, *Newton* teaches that API is a software program to carry out and program low-level services. *Callon* teaches the further recited limitation above for state information at e.g., the bottom of page 84. In particular, *Callon* teaches that RSVP is a part of MPLS, see e.g., Section 3.4.2 on page 28.

For step (c), the proposed modification of the above-applied reference(s) necessary to arrive at the claimed subject matter would be to modify *Ghani* by clarifying that control settings to the WDM optical node are API settings and that state information is maintained via RSVP.

In order to establish a prima facie case of obviousness for step (d), three basic criteria must be met. The three criteria according to MPEP 706.02(j) are as follows:

*First there must be some suggestion or modification, either in the reference(s) themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.*

As such, for step (d) examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to include the further limitations

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maintaining information regarding a state of said reconfigurable optical network and generating an API call to create a lightpath, said API call results in a message. In particular, the motivation for modifying the reference or to combine the reference teachings would be to program the WDM switch as part of control settings and to maintain state of the optical network also using RSVP as part of MPLS. In particular, *Ghani* cures the above-cited deficiency of an API by disclosing an interface to program the WDM (see e.g., figure 5) and *Ghani* also cures the above-cited deficiency of maintaining state by supporting MPLS which in-turn supports RSVP found at e.g., column 10, lines 32-40 and column 14, lines 56-64. Second, there would be a reasonable expectation of success since MPLS is taught for RSVP and the real-time software is also taught, see e.g., column 10, lines 50-57 and column 16, lines 6-15 of *Ghani*. Thus the references either in singular or in combination teach the above claim limitation(s).

As to **claims 2-5**, an IP address is assigned since an IP router is used, see e.g., column 7, lines 52-60, column 15, lines 1-30 of *Ghani*. The node, link, or channel is assigned an IP address in order to route IP. Other non-IP protocols are also supported such as ATM and frame relay. Since NHRP or MPOA protocols are supported non-IP clients are assigned IP addresses using these protocols.

As to **claim 6**, state information is sent as part of Resource Updates, see e.g., column 12 of *Ghani*. In addition, MPLS also sends update information as part of LDP.

As to **claim 7**, RSVP maintains a soft-state.

As to **claim 8**, control messages are sent as outgoing control messages 552.

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As to **claim 9**, the channel accept message is sent upstream, see e.g., column 11, lines 40-50 of *Ghani*. In addition, RSVP also sends a PATH message back.

As to **claims 10-11**, Resource Updates updates the topology and current resources, see e.g., column 12 of *Ghani*. In addition, MPLS also sends update information as part of LDP. In addition, a link-state routing protocol is used to distribute information.

As to **claim 12**, a channel request message is a probe message, see e.g., column 11 of *Ghani*.

As to **claim 15**, as any wavelength maps to any other wavelength an arbitrary scheme is used, see e.g., column 9, lines 59-67 of *Ghani*.

As to **claim 16**, the channel request messages are sent through to the destination which is over multiple hops.

As to **claim 17**, examiner notes a reasonable but broad interpretation of an IP router alert to be an IP packet which is taught by the reference as part of IP.

As to **claim 18**, the first hop router sends a channel request message.

As to **claim 19**, examiner notes a reasonable but broad interpretation of a pre-authenticated higher-layer management system which is the higher-layer networking clients 560.

As to **claim 20**, *Ghani* teaches link state protocols where OSPF is a link state protocol which is mentioned in the background, see e.g., column 4, lines 35-47. MPLS further supports OSPF, see e.g., Section 2.1 at page 16.



As to **claims 21-25**, the routing protocols use source route options in routing the packets which are apart of the updates.

As to **claim 27**, see similar rejection to claim 1. Also note a channel release message is used to release the channels.

As to **claim 28-30**, MPLS uses ICMP, CR-LDP and RSVP, see e.g., *Callon*.

As to **claim 32**, see similar rejection to claim 1.

As to **claim 33**, see similar rejection to claim 2.

As to **claim 34**, see similar rejection to claim 3.

As to **claim 35**, see similar rejection to claim 4.

As to **claim 36**, see similar rejection to claim 5.

As to **claim 37**, see similar rejection to claim 6.

As to **claim 38**, see similar rejection to claim 7.

As to **claim 39**, see similar rejection to claim 8.

As to **claim 40**, see similar rejection to claim 9.

As to **claim 41**, see similar rejection to claim 10.

As to **claim 42**, see similar rejection to claim 11.

As to **claim 43**, see similar rejection to claim 12.

As to **claim 46**, see similar rejection to claim 15.

As to **claim 47**, see similar rejection to claim 16.

As to **claim 48**, see similar rejection to claim 17.

As to **claim 49**, see similar rejection to claim 18.

As to **claim 50**, see similar rejection to claim 19.

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As to **claim 51**, see similar rejection to claim 20.

As to **claim 52**, see similar rejection to claim 21.

As to **claim 53**, see similar rejection to claim 22.

As to **claim 54**, see similar rejection to claim 23.

As to **claim 55**, see similar rejection to claim 24.

As to **claim 56**, see similar rejection to claim 25.

As to **claim 58**, see similar rejection to claim 27.

As to **claim 59**, see similar rejection to claim 28.

As to **claim 60**, see similar rejection to claim 29.

As to **claim 61**, see similar rejection to claim 30.

8. **Claims 63 and 65** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,728,484 B1 to *Ghani et al.* ("*Ghani*") in view of "A Framework for MPLS" to *Callon et al.* ("*Callon*").

As to **claim 63**, see similar rejection to claim 1. *Ghani* may be silent or deficient to explicitly forwarding a message to release the light path. In particular, *Ghani* teaches using a channel request message (see bottom of column 10) which is based on MPLS, see e.g., column 14, lines 57-65. However, it may not be clear that MPLS uses explicit routing. *Callon* clarifies that MPLS uses explicit routing. The examiner proposes to modify *Ghani* to include MPLS which teaches explicit routing. Examiner notes that it would have been obvious to one skilled in the art to use MPLS which teaches explicit routing. In particular, one skilled in the art would have been motivated to use MPLS for

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higher-layer protocols. Thus *Ghani* teaches the above-motivation at e.g., column 14, lines 56-64.

As to **claim 65**, see similar rejection to claim 63.

9. **Claims 64 and 67** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,728,484 B1 to *Ghani et al.* ("*Ghani*") in view of "A Framework for MPLS" to *Callon et al.* ("*Callon*") and "Resource ReSerVation Protocol (RSVP)" to *Braden et al.* ("*Braden*").

As to **claim 64**, see similar rejection to claim 1 with respect to state and claim 7 with respect to soft-state. RSVP is further clarified through the use of timers which would release the state of the channel given the reservation. Thus examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to release the expiration as a result of the soft-state, wherein the soft state fails to timely forward a message to create said lightpath to create said lightpath in order to maintain said lightpath. *Braden* cures the deficiencies and provides the motivation by clarifying a soft-state that uses refreshing, see e.g., Section 2.2 on page 22-23. Thus the motivation is provided as follows: *Ghani* teaches that MPLS is possible; *Callon* teaches that MPLS uses RSVP; and *Braden* clarifies the soft-state in RSVP.

As to **claim 67**, see similar rejection to claim 64.

***Allowable Subject Matter***

10. **Claims 26 and 57** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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11. **Claims 13, 14, 44, and 45** would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (571) 272-3123. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571) 272-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Derrick W. Ferris  
Examiner  
Art Unit 2663

  
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TECHNOLOGY CENTER 2600 10/25/07